YERMOLAYEV, N.P.; KOVALENKO, G.S.; KROT, N.N.; BLOKHIN, V.I.

Photometric determination of neptunium by means of xylenol orange. Zhur. anal. khim. 20 no.12:1333-1340 '65.
(MIRA 18:12)

1. Submitted February 3, 1964.

SMIRNOV-AVERIN, A.P.; KOVALENKO, O.S.; YERMOLAYEV, N.P.; KROT, N.N.

Microvolumetric complexometric method of determining neptunium.
Zhur. anal. khim. 21 no. 1 76-78 '66 (MIRA 19:1)

L 38117-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP6014142 SOURCE CODE: UR/0075/65/020/012/1336/1340

AUTHOR: Yemolayev, N. P.; Kovalenko, G. S.; Krot, N. N.; Blokhin, V. I.

ORG: none

TITLE: Photometric determination of neptunium using xylenol orange

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 12, 1336-1340

TOPIC TAGS: quantitative analysis, neptunium, photometric analysis

ABSTRACT: The tests were carried out with hydrochloric acid solutions of neptunium (IV). The optical density was measured with a Model "DU" Beckman spectrometer and a FEK-M photocolorimeter with a green light filter. The acidity of the solution was controlled with a type LP-5 lamp-type potentionmeter with a glass electrode. The results indicate that the absorption spectra of weakly acid solutions of xylenol orange and its complexes with neptunium (IV) are very different. In the long wave region, in which the absorption of complexes is high, the intensity of the color of the reagent is very slight. The maximum value of the molar coefficient of absorption of the products of the reaction between neptunium (IV) and xylenol orange is approximately 5.5×10^4/ cm-mole. The article proceeds to the description of a method for the determination

Card 1/2

UDC: 543.422

L 38117-66

ACC NR: AP6014142

of neptunium in solutions containing impurities of other elements. Experimental results are given in a table. The time required for determination by this method is 3 hours, and the error is ± 1 microgram. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 03Feb64/ ORIG REF: 005/ OTH REF: 007

Card 2/2

POLYAKOV, N.S., FRENKEL', B.B., inzh., SAMOYLYUK, N.D., kand. tekhn. nauk; KROT, V.P., SMIRNOV, V.K., kand. tekhn. nauk

Results of the experimental testing of the SP-63 scraper conveyor. Ugol' 40 no.4:53-56 Ap '65. (MIRA 18:5)

1. FTM AN UkrSSR (for Polyakov, Smirnov). 2. Gosudarstvennyy proyektno-konstruktorskiy i eksperimental'nyy institut ugol'nogo mashinostroyeniya (for Samoylyuk, Frenkel'). 3. Inepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema (for Krot).

L 26530-66 EWT(m)/EWP(w)/T/EWP(t) JD/JG

ACC NR: AP5025176 SOURCE CODE: UR/0126/65/020/003/0465/0467

AUTHOR: Bol'shutkin, D. N.; Krot, Yu. Ye.; Moskalenko, V. A.

ORG: Physico-Technical Low Temperature Institute AN USSR (Fiziko-tekhnicheskiy institut nizkikh temperatur AN USSR)

TITLE: Study of lanthanum and neodymium hardness as a function of temperature between 77°K and 293°K

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 465-467

TOPIC TAGS: Lanthanum, neodymium, hardness, temperature dependence, cryogenic effect, phase transition, liquid nitrogen, induction furnace, vacuum furnace

ABSTRACT: The system studied consisted of 99.3% lanthanum containing 0.3% Ce; 0.1% Nd; 0.2% Pr; 0.02% Fe, and neodymium containing 99.2% neodymium and $< 0.5\%$ Pr, $< 0.1\%$ Sm, $< 0.002\%$ Ca, $< 0.05\%$ Fe. Samples were prepared in a vacuum induction furnace. Measurements of hardness were made by means of Vikker's apparatus equipped with a low temperature modification. Liquid nitrogen was used to obtain temperatures in the range of 77-293°K. A heater was attached for the evaporation of liquid nitrogen. It was found that 40% deformation at room temperature increased the hardness of both metals by 60% as compared to the

Card 1/2

UDC: 620.178.15

L 26630-66

ACC NR: AP5025336

heated samples. Superimposed curves of lanthanum and neodymium show analogous temperature dependence for both metals. By cooling these metals from 293 to 77°K their hardness increased by 50% for heat-treated samples and by about 40% for cold-worked samples. The absence of polymorphic transformations of lanthanum in the temperature range of 77°-293°K, regardless of its close resemblance to cerium, which has polymorphic transformations, was confirmed. Orig. art. has: 3 figs.

SUB CODE: 11,20,13/ SUBM DATE: 14Oct64/ ORIG REF: 002/ OTH REF: 002

Card 2/2

KROTAS, R. and BIZYULYAVICHYUS, S.

"Dephyllobotriasis and Opistorchosis in the Lithuanian SSR."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Zoology and Parasitology, Lithuanian Academy of Sciences (Vilnius)

KROTAS, R.A.

Parasites of fishes in fresh-water bodies of the Lithuanian S.S.R. Trudy sov.Ikht.kom. no.9:163-167 '59.
(MIRA 13:5)

1. Institut biologii Akademii nauk Litovskoy SSR.
(Lithuania--Parasites) (Parasites--[illegible])

KULAKOVSKAYA, O.P.; KROTAS, R.A.

Khavia sinensis Hsü (Caryophyllaeidae, Cestoda), an imported Far Eastern parasite on carp farms in western regions of the U.S.S.R. Dokl.AN SSSR 137 no.5:1253-1255 Ap '61. (MIRA 14:4)

1. Nauchno-prirodovedcheskiy muzey AN USSR i Institut zoologii i parazitologii AN Litovskoy SSR. Predstavleno akademikom Ye.N. Pavlovskim.

(Cestoda) (Parasites—Carp)

SKOBELIN, V.M.; RUKSHA, G.P.; KROTENKO, F.I., burovoy master (Rostov-na-Donu); KRASTIN, N.A., inzh.; BOBROV, V.V.; SHUMILIN, V.P., brigadir puti (st.Ust'Kamenogorsk, Kazakhskoy dorogi)

Letters to the editor. Put' i put.khoz. 6 no.6:42-43 '62. (MIRA 15:7)

1. Zamestitel' nachal'nika Kotel'nichskoy distantsii Gor'kovskoy dorogi (for Skobelin). 2. Nachal'nik otdela puti, st. Leningrad-Vitebskiy, Oktyabr'skoy dorogi (for Ruksha). 3. Zamestitel' nachal'nika Terensayskoy distantsii Kuybyshevskoy dorogi (for Krasin). 4. Starshiy dorozhnyy master, stantsiya Tikhvin, Oktyabr'skoy dorogi (for Bobrov). (Railroads)

YUSUPOV, I. F., inzh.-geolog (Rostov-na-Donu); KROTENKO, F. I., burovoy master (Rostov-na-Donu)

Testing the experimental boring set in field conditions. Put' i put. khoz. 6 no.10:44-45 '62. (MIRA 15:10)

(Boring machinery—Testing)

L 11617-63 BDS

S/032/63/029/005/013/022

AUTHORS: Finkel', V. M. Kutkin, I. A. and Krotenok, P. I. 50

TITLE: On the kinetics of shock testing of metals using high-speed motion pictures 14

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 5, 1963, 593-595

TEXT: Destruction by shock created by explosion of an electric detonator was recorded at rates of 60,000 and 120,000 frames/second. Upon contact of the hammer the object at once begins to buckle; no traces of fracture are observed; presumably plastic deformation is spreading during this lag period. Then a bright band appears, indicating localized deformation; the fissure is propagated on this band simultaneously with the propagation of the band itself and at about the same rate. Two types of plastic deformation were established; very intense in the localized zone and much less intense elsewhere. Existing limitations, which can be eliminated, prevent determination of impact ductility by this method as described; it does have the value of introducing new characteristics of strength: lag of failure, velocity of the plastic wave and rate of propagation of the fissure. There are three figures.

ASSOCIATION: Sibirskiy metallurgicheskiy institut im. S. Ordzhonikidze (Siberian Metallurgical Institute imeni S. Ordzhonikidze)

Card 1/1 ja/ck

KROTENKO, R.N.

Use of exercise therapy with elderly and senile patients in a surgical clinic. Trudy Kish.gos.med.inst. 12:105-110 '60.
(MIRA 16:4)

1. Kafedra gospital'noy khirurgii Kishinevskogo gosudarstvennogo meditsinskogo instituta.
(GERIATRICS) (EXERCISE THERAPY)

KROTENKO, V.P., inzh.; ZHILA, G.V., kand.khim.nauk; POLYANICHKO, A.L., student

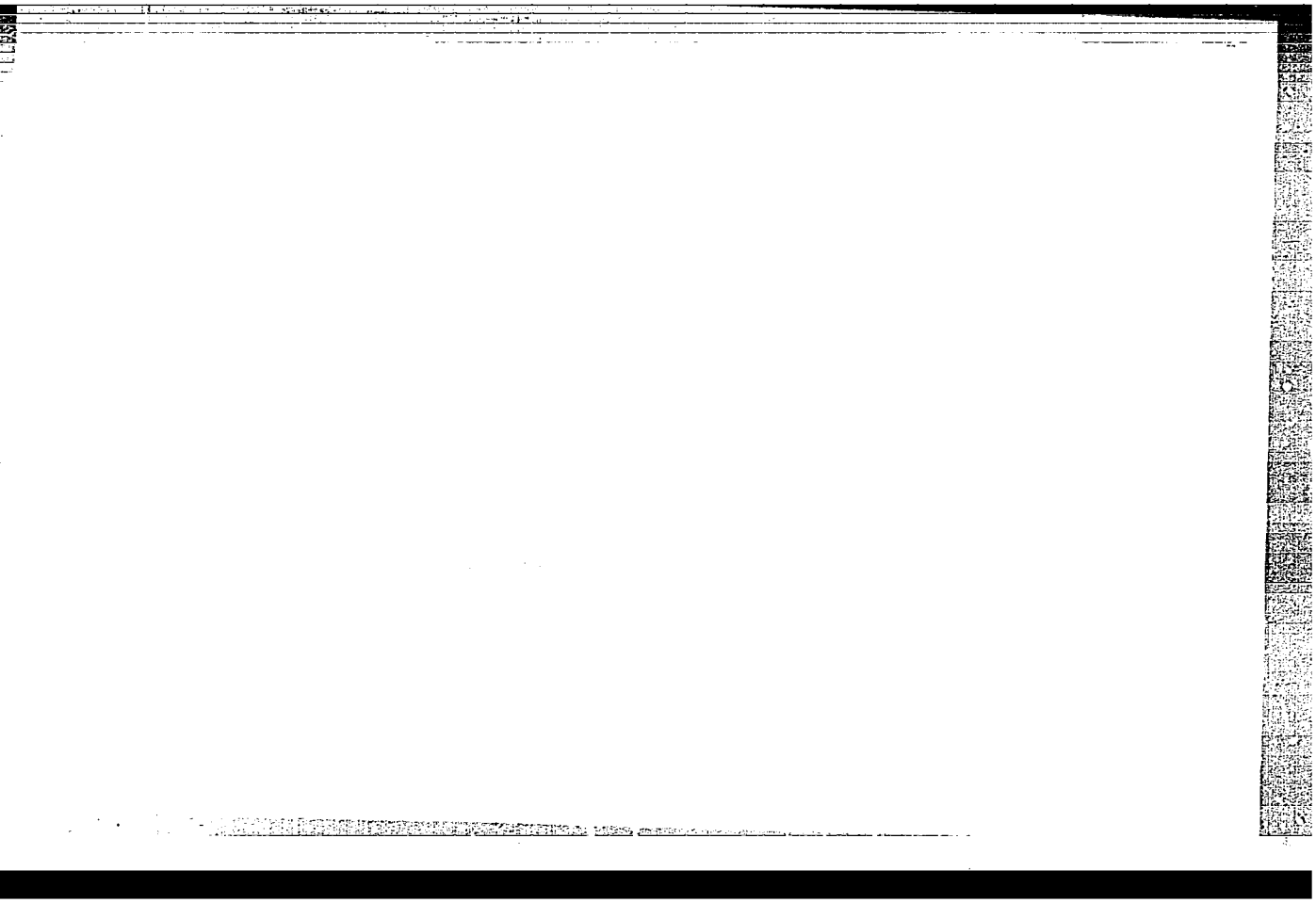
Increasing the thermal and corrosion stability of TOS thermistors.
Izv.vys.ucheb.zav.; tekh.leg.prom. no.2:144-146 '61. (MIRA 14:5)

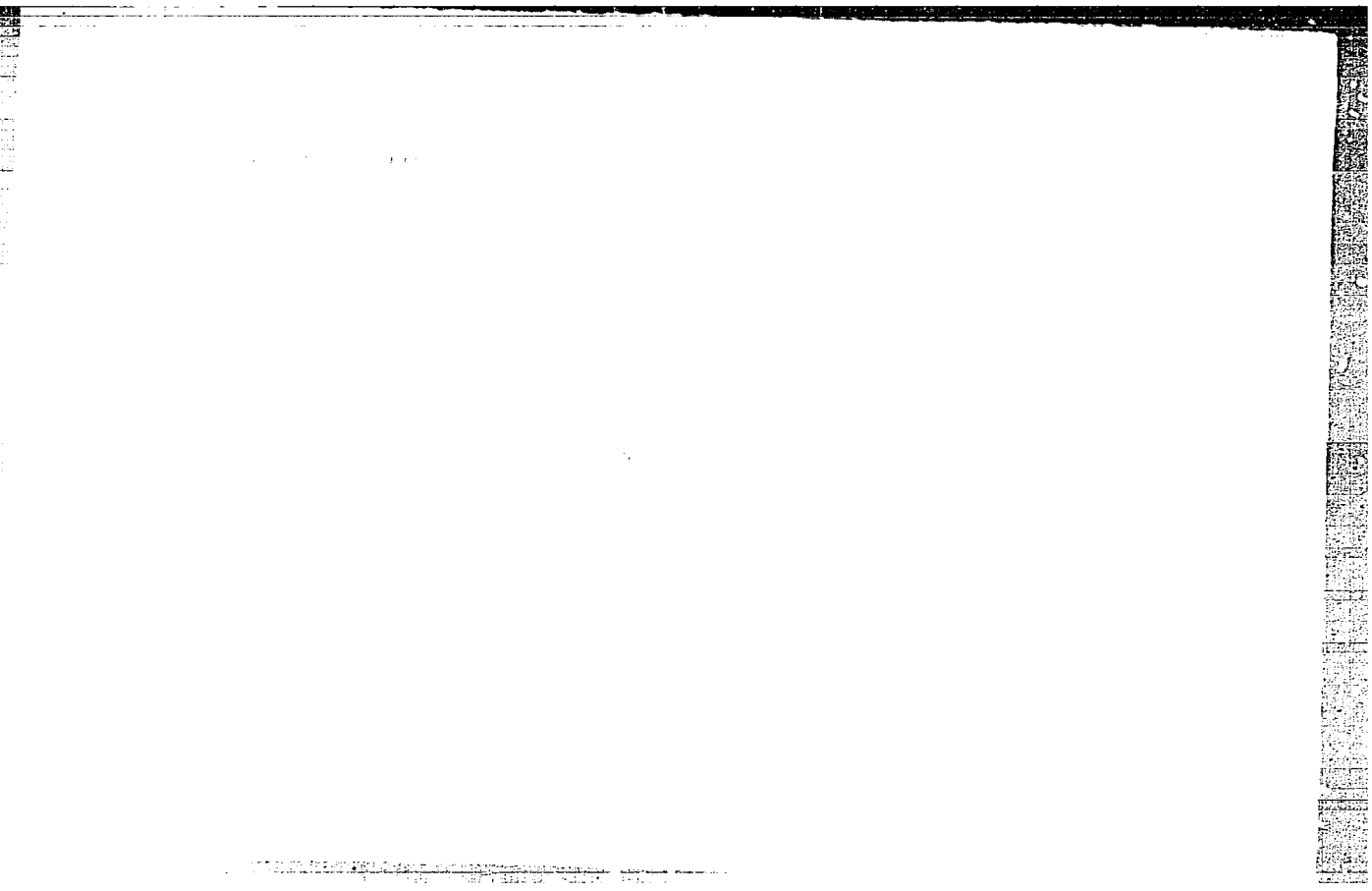
1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.
(Thermistors)

KROTENKO, V.P. (Kiyev)

Study of transfluxors with four apertures. Avtomatyka 8 no.1:59-62 '63. (MIRA 16:3)

(Cores (Electricity))
(Electronic computers--Memory systems)
(Magnetic circuits)





APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630008-8"

L 00975-66 EWT(1)/EWG(b)-2/EWP-2/EWA(h) IJP(c)

ACCESSION NR: AP5014217 UR/0102/65/000/002/0061/0068

AUTHOR: Krotenko, V. P. (Kiev)

TITLE: A controlled four-hole ferromagnetic element

SOURCE: Avtomatyka, no. 2, 1965, 61-68

TOPIC TAGS: ferrite, ferromagnetic material, automatic control, contactless switch, permalloy

ABSTRACT: A controlled 4-hole ferromagnetic element was developed at the Laboratory for Automation and Telemechanics of the Kiev Polytechnic Institute; it is one of a class of devices based on the commutation of magnetic flux in a closed branched circuit which are of rapidly growing importance as noncontact elements in automation, telemechanics, etc. The element contains a 4-hole core with central opening and three peripheral openings equidistant from the center and so positioned as to exclude unfavorable interaction between magnetic fluxes of different circuits. The core material is a ferrite with rectangular hysteresis loop. The device has a high signal to noise ratio. One disadvantage of this material is the effect of temperature on the output voltage. This effect may be reduced by using permalloy cores. The element is expected to have wide application in automation, telemechanics and communication. Orig. art. has: 4 figures and 20 formulas. [14]

Card 1/2

L 00975-66

ACCESSION NR: AP5014217

ASSOCIATION: none

SUBMITTED: 17Jan63 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 003 OTHER: 000 ATD PRESS: 4069

Card 2/2

KROTENKO, V.P. (Kiyev); PARRA, I.K. (Kiyev); KHRUSHCHEVA, N.V. [Khrushchova, N.V.] (Kiyev)

Contactless elements of the "Al'fa" cognitive system using transfluxers. Avtomatyka 10 no.4:76-80 '65.

(MIRA 18:10)

L 03010-67 EWT(d)/T/EWP(1) IJP(c) BB/GG

ACC NR: AP6005853 SOURCE CODE: UR/0102/65/000/004/0076/0080

AUTHOR: Krotenko, V. P. (Kiev); Parra, I. K. (Kiev); Khrushchova, N. V. (Kiev) 51 B

ORG: none

TITLE: Contactless elements of the "Alpha" recognition system using transfluxors 16C

SOURCE: Avtomatyka, no. 4, 1965, 76-80

TOPIC TAGS: self organizing system, pattern recognition, associative memory, memory core

ABSTRACT: The article describes associating elements in the "Alpha" recognition system and an adder using transfluxors. The first associating element described is for a recognizing system with an extreme regulator and general (external) feedback. It uses four transfluxors. The second circuit has local (internal) feedback and is based on the first circuit, but has six transfluxors. In contrast to circuit 1 it falls into the proper state almost instantaneously without prior trials; this is accomplished by cutting the control and blocking windings of two extra feedback switches into the whole shift and control circuit by means of two switches which enter into the makeup of each circuit. Voltage adding circuits are also described in some detail. The

Card 1/2

L 03010-67
ACC NR: APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630008-8

0

advantage of using transfluxors is that power supply interruption does not erase their state, and addition by their means is simple, but they are temperature-dependent and require sinusoidal current generators. Orig. art. has: 4 figures, 2 tables, and 1 formula.

SUB CODE: 09/ SUBM DATE: 21Jan65/ ORIG REF: 005

Card 2/2 awm

ACC NR: AM0059350 SOURCE CODE: UR/0271/66/000/009/A008/A008

AUTHOR: Krotenko, V. P.

TITLE: Operation of a controlled four-hole ferromagnetic element in the case of an active load

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 9A47

REF. SOURCE: Vestn. Kiyevsk. politekhn. in-ta. Ser. avtomatiki i elektropriborostr., 1965, 54-62

TOPIC TAGS: magnetic core, magnetic hysteresis, hysteresis loop, control circuit, magnetic induction, magnetic coercive force, saturation magnetization

ABSTRACT: The author considers processes which occur in bias and control circuit when rectangular voltage and current pulses are applied. The analysis neglects the active resistance of the windings, and the hysteresis loop of the core is assumed to be ideally rectangular. An analysis is made of the processes occurring in the excitation and load circuits by the method of separating the toroidal volumes whose magnetization is reversed by the alternating field, and approximating the hysteresis loop of these magnetic volumes by a rectangle with coercive force H_c and saturation induction B_s. 4 illustrations. Bibliography, 3 titles. [Translation of abstract]

SUB CODE: 09, 20

Card 1/1 UDC: 621.318.565

L 16474-66 EWT(m)/EPF(n)-2/EWP(j)/EWA(h)/EWA(l) DM/RM
ACC NR: AP6005528 (N) SOURCE CODE: UR/0089/66/020/001/0030/0035

AUTHOR: Ivanitskiy, P. G.; Krotenko, V. T.

ORG: none

TITLE: Inelastic scattering of thermal neutrons by polyethylene

SOURCE: Atomnaya energiya, v. 20, no. 1, 1966, 30-35

TOPIC TAGS: polyethylene plastic, thermal neutron, neutron scattering, inelastic scattering, scattering cross section

ABSTRACT: The authors use the time of flight method for studying inelastic scattering of low-energy neutrons by polyethylene on one of the horizontal channels in the VVR-M reactor at the Institute of Physics AN UkrSSR. The energy spectra of neutrons scattered by polyethylene at angles of 15, 30, 60, 90 and 120° are measured for seven incident neutron energies: 15.4, 25.5, 49.4, 98.8, 136.1, 193.2 and 317 Mev. The double differential cross sections for scattering of neutrons by polyethylene are determined and expressions are derived for incoherent neutron scattering and the generalized frequency spectrum of polyethylene. Considerable divergence is ob-

Card 1/2 UDC: 539.171.4

served between the experimental data and theoretical calculations based on the Nelkin model (M. Nelkin, *Phys. Rev.*, 119, 741 (1960)). In conclusion the authors take this occasion to thank M. V. Pasechnik for constant interest in the work, V. I. Mostovoy for supplying the measuring equipment and for interest in the work, O. I. Nezdrope for computer calculations, B. I. Gorbachev and A. Tsybul'nik for assistance with the measurements and analysis of the experimental data. Orig. art. has: 8 figures, 3 formulas.

SUB CODE: 18/ SUBM DATE: 09Jun65/ ORIG REF: 000/ OTH REF: 012

KROTENKO, YU. P.

N-COMPONENT ABSORPTION IN A DENSE ABSORBER
S.A. Azimov, Yu.P. Krotenko, R. Karimov, L. Khavin, A. Yuldashev

The absorption of N-component in water was measured up to depths ranging from 10 to 12 m both for the soft and the penetrating shower component, as well as the absorption efficiency of the non-equilibrium soft electron component at large depths (3-10 m). All the measurements show that the absorption coefficient of N-component in a dense absorber ($\lambda'' \cdot 300 gm/cm^2$) is much higher than the absorption coefficient in the air ($\lambda'' = 120 gm/cm^2$). Such a value for the absorption coefficient in a dense absorber of 10 to 12 m. may be explained by the production with 30% probability of decaying particles in a shower which carry away the bulk of the energy of the primary particle.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11, July 1959

S/126/61/011/004/015/023
E193/E483

AUTHORS: Finkel', V.M. and Krotenok, P.I.

TITLE: On the Problem of Plastic Deformation in the Brittle Fracture Plane

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.4, pp.601-608

TEXT: The fact that, even in the case of brittle fracture of metal, plastic deformation may take place in the thin layer, adjacent to the fracture plane, has already been established by many authors (Ref.7 to 18). Depending on the nature of the applied load and on temperature, the degree of plastic deformation has been found to vary between 1 and 5%, the thickness of the deformed layer varying from 20 microns to 3 mm. The object of the present investigation was to study the lattice distortion and fragmentation near the brittle fracture plane of rail steel, containing 0.75% C. This was done with the aid of X-ray diffraction analysis of the fracture surfaces of impact test pieces tested to fracture at temperatures between +100 and -70°C, the investigated region being situated 3 mm below the notch. The problem of determining the size of the mosaic blocks and the magnitude of the distortions of

the second type was, in this case, complicated by the fact that the thickness of the plastically (and non-uniformly) deformed layer was of the same order of magnitude as the depth of penetration of the X-ray beam. This difficulty was overcome by using a technique, consisting in analysis of X-ray patterns obtained at various angles of incidence. The theoretical basis for this technique is illustrated in Fig.1, where the thickness (Z, microns) of the material participating in producing the X-ray pattern is plotted against the angle of incidence α, the diagram having been constructed for the CoK_α radiation; curves 1 to 5 relate, respectively, to the (110), (200), (211), (220) and (310) lines in the upper half of the film; curves 1' to 5' relating to the same lines in the lower half of the film. In the present work, the authors utilized the (310) and (211) lines, produced on the opposite halves of the film by an X-ray beam falling on the target at $\alpha = 59°$ which corresponded to $Z = 35\,\mu$. The dimensions of the mosaic blocks and the magnitude of the distortions of the second type were determined by the method described by W.A.Rachinger (Ref.22). The variation of the degree of plastic

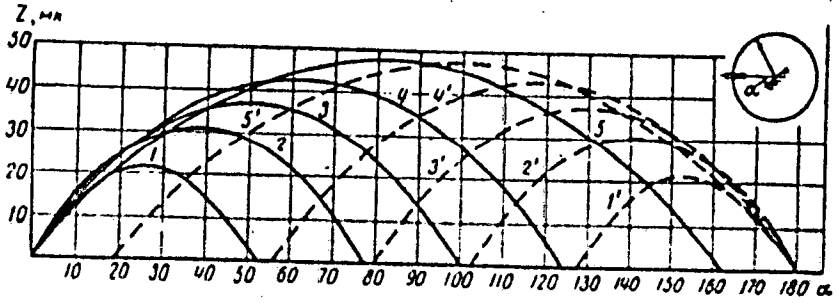
deformation with the distance from the fracture plane was studied by analysis of the (211) lines obtained for the angles of incidence of 50, 60, 70, 80, 90 and 95° and the (310) lines obtained for α = 119, 122, 128, 138, 149 and 156°, where a region situated at a distance of 7 to 37 microns from the surface was covered. In order correctly to interpret the X-ray data, it was necessary to determine the dependence of the width of the X-ray lines on the angle of incidence. After a chapter concerned with this problem, the authors report their findings which can be summarized as follows: 1. The impact strength of the rail steel studied decreases monotonically with decreasing temperature, falling from approx 10 kgm/cm^2 at 100°C to approx. 3 kgm/cm^2 at -70°C. 2. The effect of temperature on the plastic deformation of a surface layer 35 microns thick is illustrated in Fig.5, where the dimensions (D, Å) of the mosaic blocks (lower diagram) and micro-stresses ($\Delta a/a \cdot 10^{-4}$) (upper diagram) are plotted against the test temperature (°C). 3. The variation of the degree of plastic deformation with the distance from the fracture plane is illustrated in Fig.6, where the size of the mosaic blocks (D, Å) is plotted against the thickness (Z, microns) of the layer analysed,

the six curves relating to various test temperatures, as indicated on each diagram. It will be seen that at temperatures between 85 and -13°C, the size of the mosaic blocks remains constant for Z = 10 to 40 μ which indicates fairly uniform distribution of plastic deformation; the shape of the impact test pieces, broken at these temperatures, is markedly changed near the fracture plane, and the plastically deformed region extends to a distance of several mm from the fracture plane. At lower temperatures, the size of the mosaic blocks increases with the distance from the fracture plane; this indicates that with decreasing temperature, the degree of localization of plastic deformation increases, the thickness of the plastically deformed layer not exceeding 35 to 40 microns; this is also confirmed by the fact that the external dimensions of test pieces, broken at low temperatures, remain unchanged. 4. The interesting fact that no distortions of the second type have been found in test pieces, broken at low temperatures, is attributed to the possibility of plastic deformation being, in this case, localized not only in the 35 to 40 microns thick layer but also in micro-volumes of the size comparable with the size of the mosaic blocks. Acknowledgments

are made to Professor Ya.V.Grdina for his assistance. There are 6 figures and 28 references: 22 Soviet and 6 non-Soviet.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: August 10, 1960



Card 5/6 Fig.1.

L 13340-63 EWP(r)/EWP(q)/EWT(m)/EDS AFFTC/ASD EM/JD

ACCESSION NR: AP3002900 S/0148/63/000/006/0130/0137

AUTHOR: Finkel', V. M.; Krotenok, P. I.; Savel'yev, A. M.

59
57

TITLE: X-ray and fractographic studies of steel fracture 18

SOURCE: IVUZ. Chernaya metallurgiya, no. 6, 1963, 130-137

TOPIC TAGS: steel fracture, interference fractography, X-rays, microbeam, transformer steel, impact toughness, interference pattern, interference microscope

ABSTRACT: Authors studied the steel fracture under various test temperatures by interference fractography and X-rays in a flat, widely-converged microbeam. Transformer steel (4% Si) was used for the test. The steel was annealed at 1300C for 12 hours. This increased the grain size from 0.5 to 1 mm. The samples were fractured on an impact tester in a temperature interval from +20 to -120C. This showed that, with a reduction in temperature, the impact toughness decreased from 1 kgm/square cm at 0° to 0.1 - 0.2 kgm/square cm at -180C. Interference patterns of the samples which were fractured at various temperatures differed from each other. X-ray pictures show a reduction in plastic deformation with a drop in temperature. The surface of the fracture was studied by an MII-1 interference microscope. At elevated test temperatures, the surface of the spallation fragment is

Card 1/2

L 13340-63

ACCESSION NR: AP3002900

relatively smooth with shallow jogs and irregularities. The interference pattern reflects a small steric curvature of cylindrical type with the axis corresponding to the direction of the crack propagation. X-ray pictures of the cracks are included in the article. Orig. art. has: 5 figures.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Institute)

SUBMITTED: 21Aug62 DATE ACQ: 24Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 015 OTHER: 005

Card 2/2

FINKEL', V.M.; KUTKIN, I.A.; KROTENOK, P.I.

Kinetics of impact test of metals with the use of motion-picture filming. Zav.lab. 29 no.5:593-595 '63. (MIRA 16:5)

1. Sibirskiy metallurgicheskiy institut im. S.Ordzhonikidze.
(Metals--Testing)

KROTEV, LIUBOMIR B.

Krotev, Liubomir - Zakaliavaneto pres uchilishtnata vuzrast. (Sofiya) Nauka i izkustvo (1952) 18 p. (Nauchno-populiarna meditsinska literatura) (Strengthening during the school age)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 9, Oct. 1953, Uncl.

FROTEV, LIUBOMIR P.

"Osnovi na meditsinskiia kontrol nad fizicheskata podgotovka; uchevnik za V kurs na Meditsinskite akademii. (Sofiya) Nauka i izkustvo (1952) 139 p. (Principles of medical control in physical training; a textbook for the 5th year in medical academies)

SO: East European, L. C. Vol 2, no. 12, Dec. 1953

KROTEV, L. B.

EXCERPTA MEDICA Sec.2 Vol.9/8 Physiology,etc. Aug56

3517. KROTEV L.B. Military-med. Res. Inst. of the Bulgarian Republic, Sofia. *Dynamic equilibrium between inspiration and expiration (Russian text) FIZIOL. Z. 1955, 41/6 (782-785) Tables 3
In situations of expected action, such as command, loading and aiming in shooting, the inspiration is augmented over the expiration. Simonson - Minneapolis, Minn.

1. Nauchno-issledovatel'skiy voyenno-meditsinskiy institut Bolgarskoy narodnoy respubliki, Sofiya.

USSR / Human and Animal Physiology. Nervous System. T
Higher Nervous Activity. Behavior.

Abs Jour: Ref Zhur-Biol., No 22, 1958, 102268.

Author : Krotev, L. B.
[redacted] : [redacted].
Title : On Restorative Respiratory and Cardio-Vascular Conditioned Reflexes.

Orig Pub: Fiziol. zh. SSSR, 1957, 43, No 3, 219-224.

Abstract: In 8 beginners and 12 qualified riflemen, in the course of training in markmanship, an increase of starting changes of ECG and respiration and simultaneously reduction of the restorative period were observed. Thus, the restoration of the pulse rate frequency required initially more than 10 cardiac cycles and in high degree of training it took

INST: Nauchno-issledovatel'skiy voyenno-meditsinskiy inst. Bolgarskoy Narodnoy Respubliki, Sofiya

Card 1/2

USSR / Human and Animal Physiology. Nervous System. T
Higher Nervous Activity. Behavior.

Abs Jour: Ref Zhur-Biol., No 22, 1958, 102268.

Abstract: place in 1-2 cycles. The author explains the obtained facts by the production of natural restorative conditioned reflexes to the termination of bodily stress. According to his opinion, the restorative period should be regarded as reciprocal to the initial period. -- M. I. Lisina.

Card 2/2

KROTEVICH, M.V.

Sowing winter wheat in corn fields. Zemledelie 6 no.4:64-66 Ap '58. (MIRA 11:4)

1.Kishinevskiy sel'skokhozyaystvennyy institut.
(Wheat) (Corn (Maize))

BAKALINSKIY, S.P.; BRYUNELLI, B.Ye.; KROTKEVICH, N.F.

Recording geomagnetic pulsations by a highly sensitive magnetograph. Meshdunar.geofiz.god. no.7:65-67 '59.
(MIRA 13:2)

(Magnetometer)

KROTEVICH, N.F.

Field microvariation station and its use in geophysical studies. Geofiz. prib. no.20:88-93 '64. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.

KROT.VICH, N.F.; MOROZOVA, G.M.

Determination of ρ_η based on magneto-telluric profiling data. Geol. i geofiz. no.11:105-109 '60. (MIRA 14:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

(Prospecting--Geophysical methods)

KROTEVICH, N.F.; MOROZOVA, G.M.

Some problems of magnetotelluric profiling and results of testing it in the southeast of the West Siberian Lowland. Trudy Inst. geol. i geofiz. Sib. otd. AN SSSR no.11:73-86 '61. (MIRA 15:2)
(Electromagnetic prospecting)

L 10735-63 EWT(1)/T-2/BDS AFFTC/ASD/ESD-3 Pi-4/Po-4 CC/TP/IJP(C)

ACCESSION NR: AP3004019 S/0203/63/003/004/0744/0751

AUTHOR: Krotevich, N. F. 10 69

TITLE: Magnetic three-component microvariation station for field observations

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 4, 1963, 744-751

TOPIC TAGS: magnetometer, short-period magnetic variation measurement

ABSTRACT: A portable magnetometer has been designed for measuring short-period variations. The instrument operates on the principle of photoelectric transformation of the magnetic field and measures the H, D, and Z components. It consists of three magnetostatic quartz units and optical and electronic systems. The magnetic sensors, designed by V. N. Bobrov and noted for their temperature stability, are arranged in a T-shaped pattern to prevent interference and are individually compensated by adjustable permanent magnets. The housing contains a light source with three independent optical systems through which light beams are aimed at the mirrors of the magnetic systems and are reflected toward an FEU photomultiplier. Electronic filters are used to eliminate long-period variations

Card 1/2

ACCESSION NR: AP3004019

which might obscure weaker short-period ones. Instrument drift has been minimized by using Bobrov's stabilized magnetic sensors and high-stability electronic components. The instrument performed well under laboratory and field conditions. There was no interference between channels when the difference did not exceed 50 Y and the minimum scale sensitivity was 0.005 Y/mm. Recordings were taken continuously for 120 hr without malfunction despite unfavorable atmospheric conditions. It is concluded however, 1) that the Bobrov sensors, although temperature stable, need further modification; 2) that the frequency sensitivity should be lowered; and 3) that the inertia of the magnetic system should be reduced. Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: Institut geologii i geofiziki SO AN SSSR (Institute of Geology and Geophysics, SO AN SSSR)

SUBMITTED: 28Apr62

DATE ACQ: 15Aug63

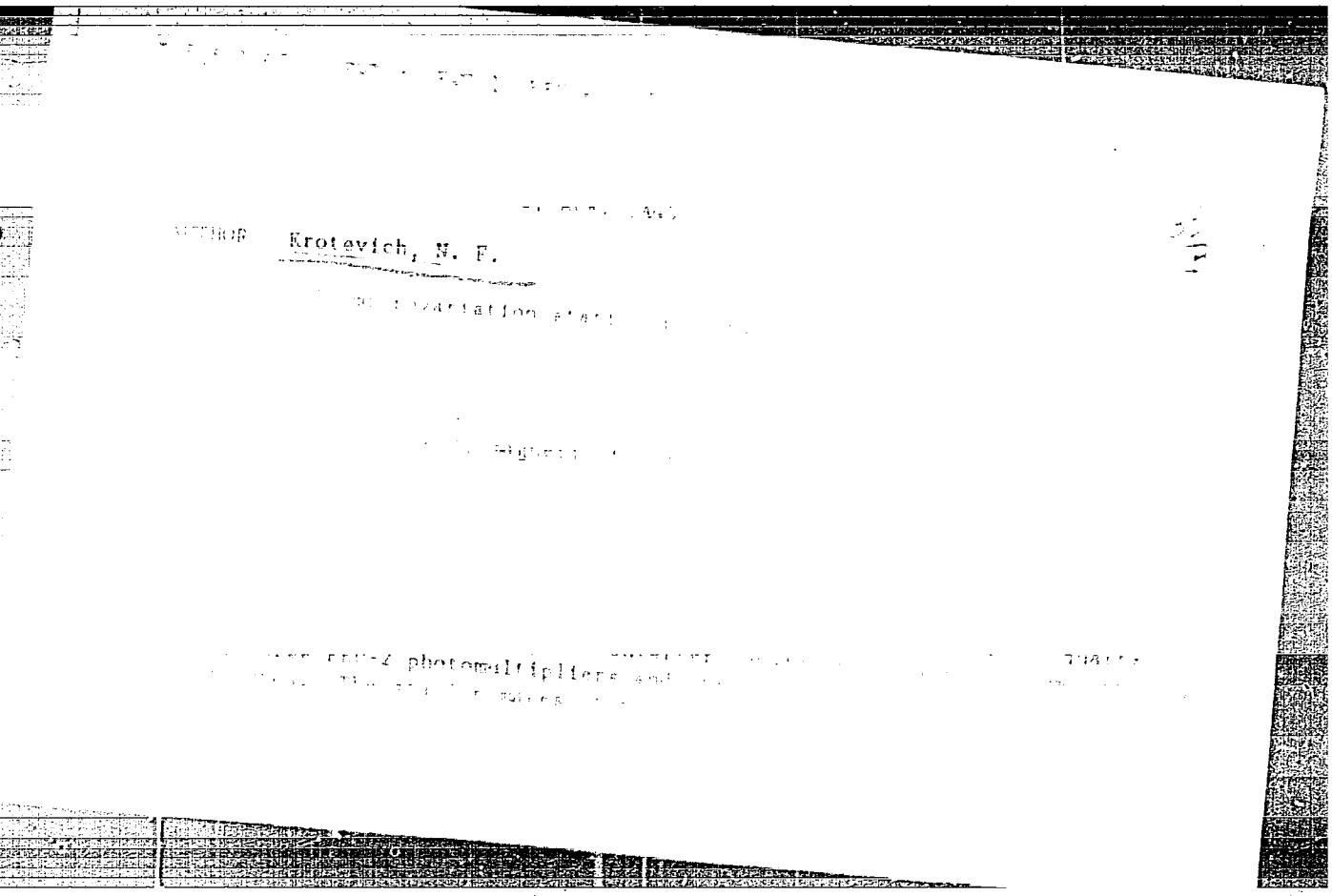
ENCL: 00

SUB CODE: 00

NO REF SOV: 005

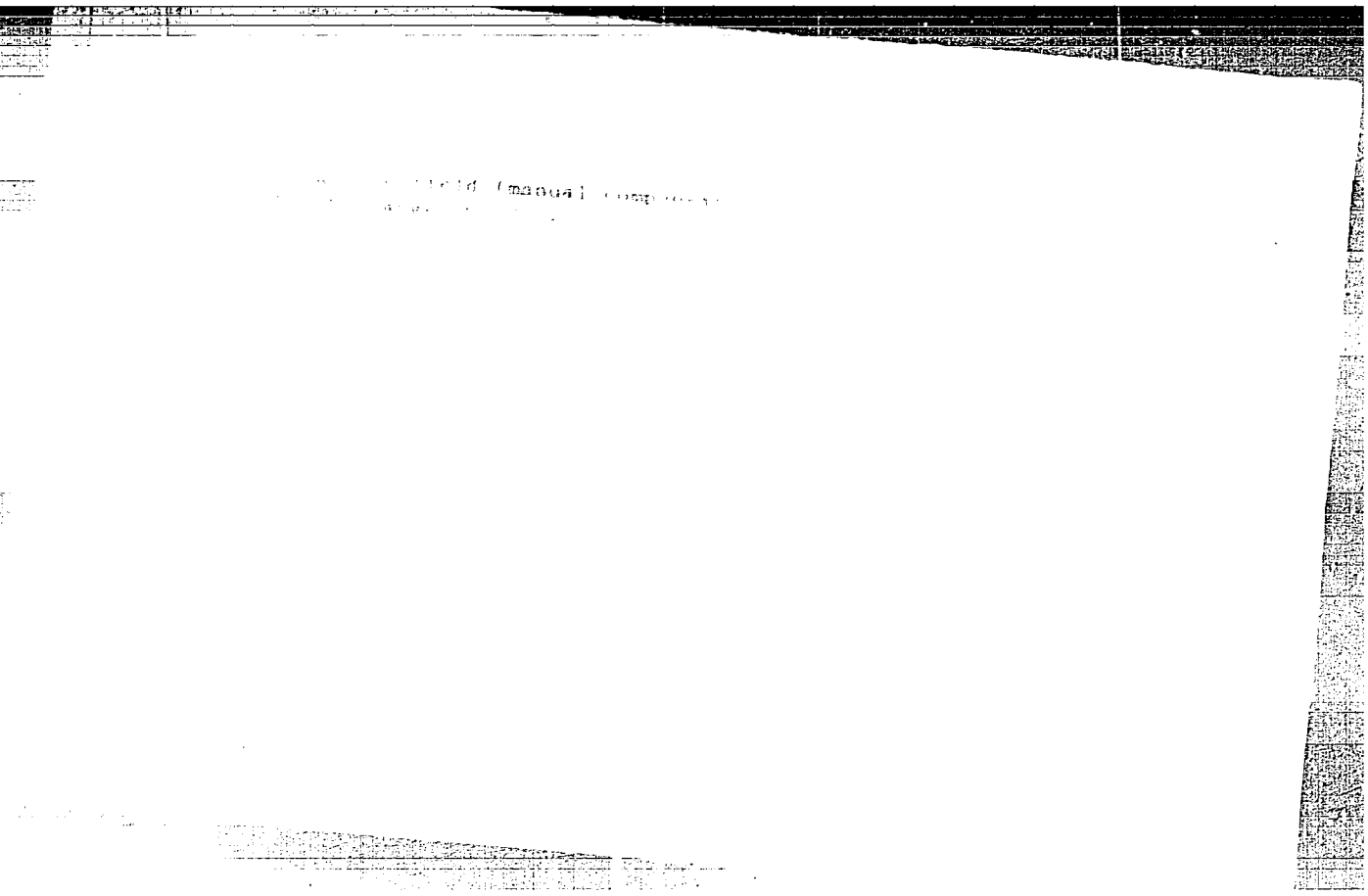
OTHER: 000

Card 2/2



AUTHOR Krotevich, N. F.

photomultipliers



[illegible] YICH

[illegible]kh lingvisticheskikh terminiv (Handbook of linguistic [illegible], by) [illegible]. V. Protsvich [illegible]. Redzevich. Kyiv, Vydavnytstvo Akademiy Nauk Ukrayins'koyi RSR, 1957.
235 p.
At head of title: Akademiya Nauk Ukrainskoy SSR. Institut Movoznavstva.
Russian title: Slovar' lingvisticheskikh terminov.

43/5
876.206
.K93

876.206 43/5

[illegible]

A few problems of fulfilling economic contracts concerning foundry products. p.251.

HUTNIK. Vol. 6, no. 8, Aug. 1956

Praha, Czechoslovakia

SOURCE: East European List (EEAL) Library of Congress, Vol. 6, No. 1, January 1957

[illegible], P. V.; MEDVEY, A. N.

"Solution of the problem of sanitary protection of the environment from radioactive contamination in the Soviet Union."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

AUTHORS: Krotikov, V. A., Filimonova, I. N.

TITLE: An Essay on the Pedagogical Activity of D. I. Mendeleyev at the Petersburg University (1867-1881) (Ocherk pedagogicheskoy deyatel'nosti D. I. Mendeleyeva v Peterburgskom universitete (1867-1881)) SOV/54-58-3-17/19

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 3, pp 140-148 (USSR)

ABSTRACT: On the pedagogical activity of D. I. Mendeleyev in the years from 1856 to 1867 a report was given already in Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 10, p 126. In 1867, a new section in D. I. Mendeleyev's life and activity began. He became head of the chair of chemistry at the physical-mathematical faculty. He gave courses on general, organic (until 1868), and inorganic chemistry. Mendeleyev's scientific activity was very intensive in the '60 -'70-ies. In this time he made his discoveries and wrote papers that made him famous all over the world. His paper "Fundamentals of Chemistry" ("Osnovy khimii") was the first manual of chemistry that was based on the periodic law discovered by Men-

Card 1/3

deleyev. The problem on indefinite compounds had a special place in this textbook. Mendeleyev's conceptions on indefinite compounds, especially about liquid solutions was new in science. His pedagogical experience and position as head of the chair of chemistry enabled him to complete the teaching schedule at the physical-mathematical faculty and to promote the university to the position of a scientific research institution. Thanks to his endeavors the position of university teachers became firmly established and one of the greatest Russian chemists, A. M. Butlerov (1868), was invited to the university. Mendeleyev gave a great contribution to the enlargement of the chemical laboratory and of the library. He always made efforts to help poor students. After 25 years of activity, in 1880, according to the codex of the university he was to resign his office. But because of his extraordinary merits he unanimously was voted as to remain at the university. There are 26 references, 26 of which are Soviet.

AUTHORS: Krotikov, V.A., Filimonova, I.N.

TITLE: A Report Concerning the Pedagogical Activities of D.I.Mendeleyev at Petersburg University (1856-1867) (Ocherk pedagogicheskoy deyatel'nosti D.I.Mendeleyeva v Peterburgskom universitete (1856-1867 gg.)

54-10-2-14/16

PERIODICAL: Vestnik Leningradskogo Universiteta, Seriya fiziki i khimii , 1958, Vol.10, Nr 2, pp. 126-132 (USSR)

ABSTRACT: For a period of 33 years (1856-1890) D.I.Mendeleyev was closely connected with Petersburg University. This period, which was the most productive of his life and of his activities, can be subdivided into 3 periods: 1.) 1856-1867. During this time Mendeleyev taught various chemical subjects (organic, theoretical, technical, and analytical chemistry), defended his Master's and Doctor's dissertations, and wrote and edited a number of monographs dealing with various fields of chemistry. It was during this early stage of his career that he developed to be an independent research scientist. 2.) 1867-1881. In 1867 Mendeleyev obtained the chair of chemistry. He concentrated his activities mainly on teaching anorganic chemistry. Until the end of the seventies he mainly

Card 1/2

A Report Concerning the Pedagogical Activities of D.I.Mendeleyev at Petersburg University (1856-1867) 54-10-2-14/16

worked in connection with the creation of the "Bases of Chemistry", the periodic system of chemical elements, and the study of the elasticity of gases. 3.) The early eighties marked another turning point in his career. His pedagogical activities during this period were characterized by the fact that he displayed considerably more interest in problems of general instruction and for the organization of scientific work at the universities. Also his research work was directed towards other problems. The problem that occupied Mendeleyev's greatest attention were solutions. As a pedagogue he continued teaching as the holder of the chair for chemistry, and he lectured on anorganic chemistry. In 1890 Mendeleyev handed in his resignation and left the university. There are 14 references, all of which are Soviet.

SUBMITTED: June 23, 1957

AVAILABLE: Library of Congress

1. Instructors—Chemistry—USSR

Card 2/2

KROTIKOV, V.A.; FILIMONOVA, I.N.

Outline of the pedagogical activity of D.I.Mendeleev in Petersburg University in 1867 - 1881 [with summary in English]. Vest. LGU 13 no.16:140-148 '58. (MIRA 11:11)
(Mendeleev, Dimitrii Ivanovich, 1834-1907)

Kecl, Kev, V.A.

5(2) PHASE I BOOK EXPLOITATION SOV/2946

Leningrad. Universitet

Voprosy khimii (Problems in Chemistry) [Leningrad] Izd-vo Leningradskogo univ., 1959. 160 p. (Series: Its: Uchenyye zapiski, no. 272) (Series: Leningrad. Universitet. Uchenyye zapiski. Seriya khimicheskikh nauk, vyp. 18) 1,600 copies printed.

Resp. Ed.: A. G. Morachevskiy; Ed.: Ye. V. Shchemelev; Tech. Ed.: S. D. Voddingina.

PURPOSE: This book is intended for chemists in research and industry as well as for teachers and students in chemical vuzes.

COVERAGE: This collection of eighteen articles on various branches of chemistry, mainly physical and analytical, was compiled on the basis of experimental research by the Chemistry Department of Leningrad University. The articles deal chiefly with methods of isolating rare earths in pure form and identifying them. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

5(0) SOV/54-59-1-16/25

AUTHORS: Krotikov, V. A., Filimonova, I. N.

TITLE: An Essay on the Pedagogical Activity of D. I. Mendeleyev at the Peterburg University (in the Years 1881-1890) (Ocherk pedagogicheskoy deyatel'nosti D. I. Mendeleyeva v Peterburgskom universitete (1881-1890gg.))

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 1, pp 112-119 (USSR)

ABSTRACT: In the years from 1881-1890 Mendeleyev carried on his activity at the Chair for Chemistry of the Peterburg University. In November 1884 he was awarded the title of a Honored Full Professor and in August 1885 after thirty years of educational activity he retired. Afterwards, he held one more lecture on general chemistry. A shorthand manuscript of his lectures on general chemistry held in the last years before 1890 is preserved in the archives of the Leningradskiy gosudarstvennyy universitet (Leningrad State University). A short outline of his lectures is given here on the basis of these manuscripts. In the beginning he lectured on the limits and forms of chemical conversions, on elements and simple bodies and on the effect of

Card 1/3

An Essay on the Pedagogical Activity of D I. Mendeleyev at the Peterburg University (in the Years 1881-1890)

various forms of energy. His introductory subject to pure chemistry was hydrogen Thereupon he investigated the "organogenic" elements hydrogen, oxygen, nitrogen and carbon In the remaining part of his lecture he dealt with the elements and their compounds of the individual groups of the periodic system. D. I. Mendeleyev very actively participated in laying down the new higher education rules established in 1884. He was specially concerned with the course of education of the students. He emphasized his view that this should bear a scientific character rather than a scholastic one Also examinations should be considered under this point of view Several passages from his "Zamechaniya" (Remarks) are quoted. In this connection also a letter written by Mendeleyev to S. Yu. Vitte on October 15, 1895 on secondary and higher education is mentioned. Mendeleyev's activity at the Peterburg University marked the beginning of a great promotion of educational and scientific activity in the field of chemistry A number of well-known chemists are to be found among Mendeleyev's successors and among the scientists of that University: G G. Gustaveon, A L Potylitsyn, V. Ye.

An Essay on the Pedagogical Activity of D I. Mendeleyev at the Peterburg University (in the Years 1881-1890) SOV/54-59-1-16/25

Tishchenko, D P. Konovalov, and others There are 19 Soviet references.

SUBMITTED: June 10, 1958

Card 3/3

KROTIKOV, V.A.; FILIMONOVA, I.N.

Essay on the pedagogical activity of D.I. Mendeleev at St. Petersburg University (1881 - 1890). Vest.LGU 14 no.4:112-119 '59. (MIRA 12:5)
(Mendeleev, Dimitrii Ivanovich, 1834 - 1907)

ZAKHAR'YEVSKIY, M.S.; KHOTIKOV, V.A.

Study of sodium and potassium nitrate melts by the method of electromotive forces. Uch.zap.LGU no.272:57-63 '59.
(MIRA 13:1)

(Sodium nitrate) (Potassium nitrate)
(Electromotive force)

[illegible]

Conference in memory of A.A. Voskresenskii. Zhur. Vk. O 5
no. 3:341 '58. (MIR 11:7)
(Voskresenskii, Aleksandr Abramovich, 1880-1958)

YEREMEYEVA, S.I.; YAKOVLEV, V.B.; CHESNOVA, L.V.; SHLYKOVA, S.A.; KOZLOV, S.G.; KHRENOV, K.K. (Kiyev); TIGRANYAN, S.T. (Yerevan); KROTIKOV, V.A. (Leningrad)

In the Soviet National Association of Historians of Science and Technology. Vop.ist.est.i tekh. no.10:180-187 '60. (MIRA 14:3)
(Scientific societies)

KROTIKOV, V.A. (Leningrad)

In the Soviet National Association of Historians of Natural Science and Technology. Vop.ist.est.i tekh. no.12:245-246 '62. (MIRA 15:4)

(Scientific societies)

MAKARENEYA, A.A.; MOGILEV, M.Ye.; KROTIKOV, V.A.; BALICHEVA, T.G.; ARIYA, S.M., otv. red.; PIASTRO, V.D., red.; YELIZAROVA, N.A., tekhn. red.

[How to prepare for entrance examinations for institutions of higher learning; chemistry] Kak gotovit'sia k priemnym ekzamenam v vuz; khimiia. Izd.2. Leningrad, 1963. 153 p. (MIRA 17:1)

1. Leningrad. Universitet.

KROTIKOV, V.A. (Leningrad)

History of the foundation of the Russian Chemical Society. Vop. ist. est. i tekh. no.13:83-88 '62. (MIRA 16:5)

(Chemical societies)

IJP(c) JD/WW/RM

ACCESSION NR: AP4045799

S/0062/64/000/009/1689/1691

AUTHOR: Krotikov, V. A.; Kharitonov, [illegible]

[illegible]

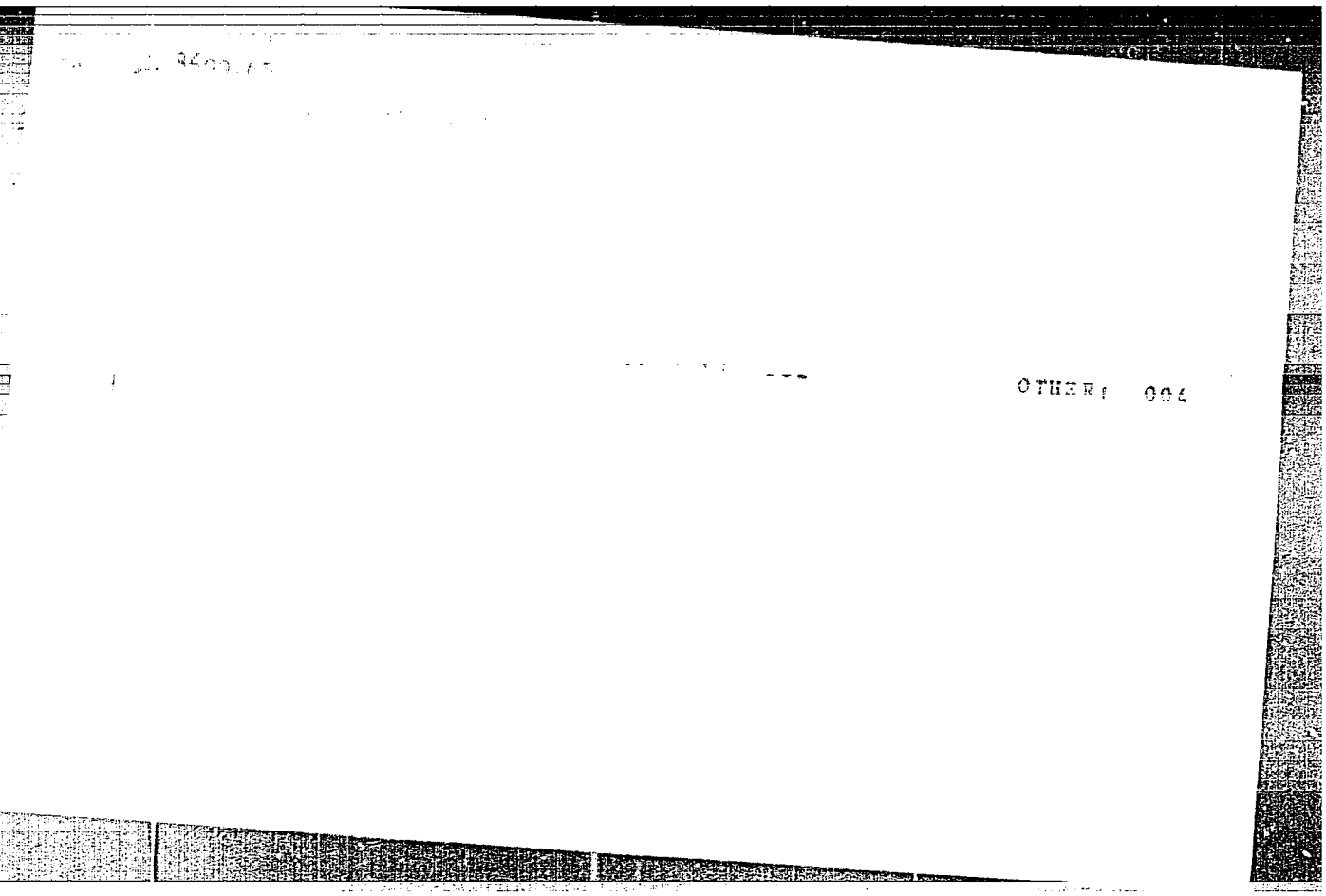
L 4590-66

ACCESSION NR: AP4045799

[illegible] of reactive hydroxyl groups [illegible]
[illegible] of reactions between [illegible]

[illegible] samples,
[illegible] hydroxyl-[illegible]
[illegible] that in these [illegible]
[illegible] groups. In boiled montmorillonite [illegible] decrease in the
[illegible] trend, the hydroxyl-[illegible]

[illegible]



39685
S/141/61/004/004/019/024
E032/E514

3.2500 (1050)

AUTHORS: Krotikov, V.D., Porfir'yev, V.A. and Troitskiy, V.S.

TITLE: Standardization of lunar radio-emission at [illegible] wavelength

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1961, Vol.4, No.4, p.759

TEXT: Present radio-astronomical methods for absolute measurements of centimetre waves do not ensure an accuracy better than 10-15%. The present authors have developed a method for the accurate measurement of the radio emission of the moon and of discrete sources in the centimetre range. The method is a development of the procedure described by V. S. Troitskiy and N. M. Tseytlin (Refs.1 and 2: Izv. vyssh. uch. zav. Radiofizika, 4, 393, 1961; Ibid, 4, 600, 1961), R. N. Whithurst, J. Kopeland, F. H. Mitchell (Ref.3: Proc. IRE 45, 1410, 1957) and A. P. Molchanov (Ref.4: Izv.vyssh. uch.zav., Radiofizika, 3, 722, 1960). It ensures an accuracy of the order of 1%. It has been used in the precision measurement of the radio temperature of the moon at 3.2 cm wavelength. The vertical polarization measurements

Card 1/3

30685

Standardization of lunar radio... S/141/61/004/004/019/024
E032/E514

were carried out using a radiometer with a 1.5 m diameter mirror. The sensitivity threshold was 0.2°K at a time constant of 16 sec. The beam width was 1.3° and ensured almost uniform "illumination" of the lunar disc. The radio temperature was therefore practically equal to the average brightness temperature of the disc. The lunar emission was measured by comparing it with two standards, namely, a perfectly black disc with apparent angular dimensions equal to those of the moon, and a further standard in the form of a black plane covering the main lobe and having a central aperture with dimensions equal to those of the lunar disc. Both standards were placed 15-20° above the horizon. Atmospheric absorption and differences in the angular dimensions of the moon and the standards were taken into account. The radio temperature averaged over the disc at 3.2 cm wavelength was found to be

$$\bar{T}_{\Lambda} = \frac{1}{\Omega_{\Lambda}} \int_{\Omega_{\Lambda}} T_{\Lambda} \, d\Omega = 210° + 13.5° \cos (\quad t - 55°).$$

The total systematic error is estimated to be less than ± 2.5%.

Card 2/3

Standardizing the radio emission ... 30685 S/141/61/004/004/019/024 E032/E514

It is stated that (with certain improvements) the accuracy can be reduced by a factor of 2. This result was used to compute the brightness temperature at the centre of the disc and the result is $T_{br.} = 226°$. The latter is in agreement with the value reported by K. M. Strezhneva and V. S. Troitskiy (Ref.2). Further details will be published later. There are 5 references: 4 Soviet and 1 English (quoted in text).

[Abstractor's Note: Complete translation.]

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysical Institute of the Gor'kiy University)

SUBMITTED: June 23, 1961

Card 3/3

3,1720
3-2500 (1080, 1395)

33217
S/141/61/004/006/002/017
E032/E114

AUTHORS: Krotikov, V.D., Porfir'yev, V.A., and Troitskiy, V.S.

TITLE: Development of a method for the precision measurement and calibration of the lunar radio emission at λ = 3.2 cm

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v.4, no.6, 1961, 1004-1012

TEXT: The method described consists of the comparison of the radio emission of a given source with the thermal radio emission of a perfectly black disc heated to the temperature of its surroundings and placed against the background of the sky at a sufficiently large elevation angle. Since the calibration signal is equal to the difference between the temperature of the disc and the radio temperature of the background at the particular elevation, this method cannot be used at wavelengths beyond the millimetre range while at low frequencies it is limited by diffraction effects. Instead of a disc one can also use an aperture in a black plane. The measurements were carried

Card 1/3

Development of a method for the ...

out in two stages. To begin with the artificial moon, i.e. the black disc, is placed in the beam of the antenna and the increase in the antenna temperature at the particular angle is determined. Next, the disc is replaced by a black plane covering the main lobe of the antenna and containing a central aperture equal in diameter to the disc, and the change in the temperature when the disc is inserted into the aperture is determined. Finally, the signal from the moon is recorded in the usual way. Experimental verification of the method showed that it is capable of a 2% accuracy. It is said to be similar to that described by R.N. Whithurst, J. Kopeland and F.H. Mitchell (Ref.3: Proc. IRE, v.45, 1410 (1957)). It was found that the diffraction error which occurs at low elevation angles may be determined and excluded with the aid of a second thermal standard in the form of an aperture in a black plane, or by means of two thermal emitters forming a system of additional screens. The method has been used to determine the average radio temperature of the lunar disc. It was found that the temperature variation is given by (one cycle):

$T_{..f} = 210^{\circ} + 13.5^{\circ} \cos(\Omega t - 55^{\circ}) + 1.7^{\circ} \cos(2\Omega t + 44^{\circ}) +$

$+ 0.5^{\circ} \cos(3\Omega t + 11^{\circ})$ (winter months) (13)

The rms error in the temperature is less than ± 2.5%. The accuracy of the amplitude is better than ± 5%. Acknowledgments are expressed to N.M. Tseytlin and V.A. Razin for discussing the work and criticisms. A.P. Molchanov is mentioned in the article.
There are 2 figures, 1 table and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc. The English language reference reads:
Ref.3: R.N. Whithurst, J. Kopeland, F.H. Mitchell.
Proc. IRE, v.45, 1410 (1957).
ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete
(Scientific Research Radiophysics Institute at Gor'kiy University)
SUBMITTED: May 13, 1961

KROTIKOV, V.D.

Precision measurement of lunar radio emission a a wavelength of 9.6 cm. Izv. vys. ucheb. zav; radiofiz. 5 no.3:604-606 '62. (MIRA 15:7)

1. Nauchno-issledovatel'skiy radiofizcheskiy institut pri Gor'kovskom universitete.

(Moon—Temperature ani radiation)

EROTIKOV, V.D.

Some electrical properties of earth rocks and their comparison with those of lunar surface layers. Izv.vys.ucheb.zav.; radiofiz. 5 no.6:1057-1061 '62. (MIRA 16:2)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.
(Moon—Surface) (Earth—Surface)

KROTIKOV, V.D.; TROITSKIY, V.S.

Radiation properties of the moon at centimeter wavelengths. Astron.zhur. 39 no.6:1089-1093 N-D '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universiteta.

(Moon)
(Radio astronomy)

KROTIKOV, V.D., TROITSKIY, V.S.

Discovery of the Moon's Hot Interior

Report to be submitted for the 4th International Space Science Symposium (COSPAR) Warsaw, 2-12 June 63

KROTIKOV, V. D.; TROITSKIY, V. S.

Thermal conductivity of lunar materials according to the data of precision measurements of lunar radio emission. Astron. zhur. 40 no.1:158-160 J-F '63. (MIRA 16:1)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta im. N. I. Lobachevskogo.

(Moon—Surface) (Radio astronomy)

KROTIKOV, V. D.

ACCESSION NR: AP3000148 S/0141/63/006/002/0242/0245

AUTHOR: Krotikov, V. D.; Porfir'yev, V. A.

TITLE: Precise measurement of lunar radio emission at the 35- and 36-cm wavelengths

SOURCE: Izvestiya vysshikh uchebnykh zavedeniy, radiofizika, v. 6, no. 2, 1963, 242-245

TOPIC TAGS: lunar radio emission, artificial moon, logarithmic antenna, sensitivity threshold

ABSTRACT: Some results of precise measurements of lunar radio emissions at the 35- and 36-cm wavelengths using the "artificial moon" method are reported. Measurements were carried out using the vertical polarization of a radio telescope consisting of an 8-m parabolic dish and excited by a logarithmic antenna, and a modulation radiometer with a fluctuation sensitivity threshold of 0.4° at a time constant of 16 sec. The radiation pattern width at

Card 1/3

ACCESSION NR: AP3000148

half-power points was 3.1°. Two series of measurements were made under essentially different conditions and with different reference disks. During the first series of measurements the moon was observed from 5 to 13 June 1962, when it was in its first quarter. The second series of measurements took place from 13 to 22 August 1962, from the half moon to the last quarter. Both series of measurements led to identical results. Lunar temperature measured was found to be higher than in the lower centimeter range. The effective averaged temperature over the disk was found to be equal to 236 + or - 10K at the 35-cm wavelength and to 237 + or - 7.5K at the 36-cm wavelength. A random error, caused basically by the internal equipment noise, was equal to 2.5% in the first case and to 1.5% in the second. The greatest systematic error was + or - 2% and 1.5% for the first and second cases, respectively. A comparsion of results with measurements obtained at the 1.6-, 3.2-, and 9.6-cm wavelengths made in previous studies, also using an artificial moon method, demonstrates a systematic increase in temperature with an increase in the wavelength. Since, with an increase in the wavelength the thickness of the radiating layer of the moon also increases, the increase in temperature indicates that the lunar crust temperature increases with the depth. "In conclu-

Card 2/3

ACCESSION NR: AP3000148

sion we express our deep thanks to V. S. Troitskiy for his management of the work. We take this opportunity also to thank V. A. Zakatov and V. N. Gyscyev for their help in the experiment and A. N. Ivannikova for her participation in the processing of the experimental data." Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Institute of Radiophysics of Gor'kiy State University)

SUBMITTED: 30Oct62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 000

Card 3/3

S/033/63/040/002/013/021
E001/E120

AUTHORS: Krotikov V.D., and Shchuko, O.B.

TITLE: On the thermal behavior of the Moon's surface layer during lunations

PERIODICAL: Astronomicheskiy zhurnal, v.40, no.2, 1963, 297-303

TEXT: The problem of the Moon's surface layer thermal behavior is reduced to calculating the heating of the surface of a semi-infinite solid body which is being warmed periodically by the Sun and is radiating according to the Stephan-Boltzmann law. The present article describes the results of investigating this problem by means of a БЭСМ-2 (BESM-2) electronic computer. As studies of the Moon's radio emission have shown, the single-layer model of the lunar surface agrees well with experimental data. Only a uniform structure of this surface layer is considered. The steady-state solution of the heat conductivity equation

$$\frac{\partial T}{\partial t} - a\frac{\partial^2 T}{\partial x^2} = 0$$

with corresponding initial and boundary conditions was found by

the method of finite differences. The values of the surface temperature and depth distribution of temperature were calculated, assuming the solar constant A_0 to be 0.033 cal/cm^2.sec, for different values of parameter $\gamma = (K\rho c)^{-1/2}$ where K is thermal conductivity coefficient, ρ is density, and c is thermal capacity. The results of calculations are tabulated and presented graphically. The temperatures of the subsolar point T_m, mean nightly temperature T_n, constant component T_0 and amplitude of the first harmonic T_1, as functions of parameter γ are presented in the curves of Fig.3. The function of temperature distribution over the lunar surface is described by the formula:

$$T_{surf}(\varphi\psi t) = T_0 \cos^{1/5}\psi + T_1 \cos^{1/3}\psi \cos(\Omega t - \varphi - \varphi_1) +$$

$$+ T_2 \cos^{0.27}\psi \cos(2\Omega t - 2\varphi + \varphi_2) -$$

$$- T_3 \cos^{7/16}\psi \cos(3\Omega t - 3\varphi - \varphi_3) - \ldots,$$

where T_n and φ_n are values of amplitudes and phases of harmonics for the center of the lunar disk; Ω is lunation

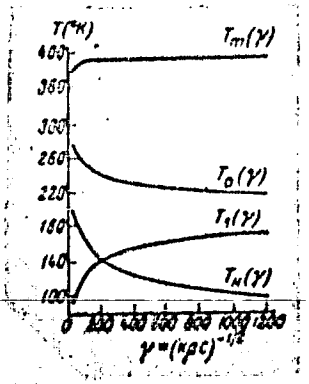
Card 2/4

frequency; φ is longitude and ψ is latitude. The results of calculations were compared with experimental data taken from the Sinton thermal map of the Moon (Lowell. Obs. Bull., v.5, no.1, 1961) for infrared wavelengths, and the agreement between calculated and experimental data was found satisfactory.
V.S. Troitskiy is thanked for the supervision of the present study. There are 5 figures and 1 table.

ASSOCIATION: Radiofizicheskiy institut Gor'kovskogo gos. universiteta im. N.I. Lobachevskogo (Radiophysical Institute of the Gor'kiy State University imeni N.I. Lobachevskiy)

SUBMITTED: March 13, 1962

Fig. 3. Dependences of T_m, T_o, T_1 and T_n on parameter $(K\xi c)^{-1/2}$



Card 4/4

EWT(1)/FBD/FCC(w)/EDS/ES(v)/EEC-2 APFTC/ASD/ESD-3

ACCESSION NR: AP3004853 S/0141/63/006/003/0633/0634

AUTHOR: [redacted] V. D.; Troitskiy, V. S. 73

TITLE: Heat flux from the depth of the Moon

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 633-634

TOPIC TAGS: Moon, heat flux, Moon radiation

ABSTRACT: Precision measurements of lunar radio emission at 0.4, 1.6, 3.2, 10, and 35-cm wavelengths were made by the Radiophysics Institute (Gor'kiy University) in 1961-62. The lunar temperature was found to grow with the wavelength, 211K at 3.2 cm, 237K at 35 cm. The offered explanation is that the temperature grows with increasing Moon depth. The thermal flux density, 1.3×10^{-6} cal-cm^{-2}.sec^{-1}, calculated from the above data is about 5 times as high as the existing theoretical evaluations which is explained by the high radioactivity of lunar rock. Orig. art. has: no figure, formula, or table.

ASSOCIATION: Scientific-Research Radiophysics Institute, Gor'kiy University.

Card 1/2

KROTIKOV, V.D.; SHCHUKO, O.B.

Thermal condition of the moon's surface layer during a lunation. Astron.zhur. 40 no.2:297-303 Mr-Ap '63. (MIRA 16:3)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta im. N.I.Lobachevskogo.
(Moon--Surface)

KROTIKOV, V.D.; TROITSKIY, V.S.

Heat flow from the moon's interior. Izv. vys. ucheb.zav.; radiofiz. 6 no.3:633-634 '63. (MIRA 16:9)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.
(Moon—Temperature and radiation)

KROTIKOV, V.D.; TROITSKIY, V.S.

Detection of a hot flow from the moon's interior. Astron.zhur. 40 no.6:1076-1082 N-D '63. (MIRA 16:12)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

ACCESSION NR: AP4017030 S/0141/63/006/006/1087/1089

AUTHOR: Krotikov, V. D.

TITLE: Measurement of radio emission from the moon at 50 cm

SOURCE: IVUZ. Radiofizika, v. 6, no. 6, 1963, 1087-1089

TOPIC TAGS: radioastronomy, moon, 50 cm radio emission, radio telescope, modulation radiometer, artificial moon method, effective radio temperature, effective average radio temperature

ABSTRACT: Precision measurements of the radio emission from the moon were made at 50 cm with a radio telescope consisting of a parabolic reflector 8 meters in diameter and a modulation radiometer with 0.3K threshold. The "artificial moon" method, described by V. D. Krotikov, V. A. Porfir'yev, and V. S. Troitskiy (Izv. VUZ'ov. Radiofizika, v. 4, 1004, 1961), was used. The measurement procedure and the means used to eliminate the cosmic-ray background are de-

Card 1/2

ACCESSION NR: AP4017030

scribed. The effective temperature averaged over the disk was found to be 240 ± 14°K. The accuracy of the results is analyzed. The value obtained confirms an earlier conclusion (Izv. VUZ'ov. Radiofizika, v. 6, 242, 1963) that the average effective temperature increases with wavelength, and indicates that the temperature increases in the interior of the moon. "In conclusion I am grateful to V. S. Troitskiy for guidance of this work, to E. S. Plankin and Yu. P. Razumovskiy for participating in the observations, and to A. N. Ivannikova for help with the reduction of the experimental data." Orig. art. has: 2 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of the Gor'kiy University)

SUBMITTED: 03Apr63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: PH, AS NO REF SOV: 004 OTHER: 002

Card 2/2

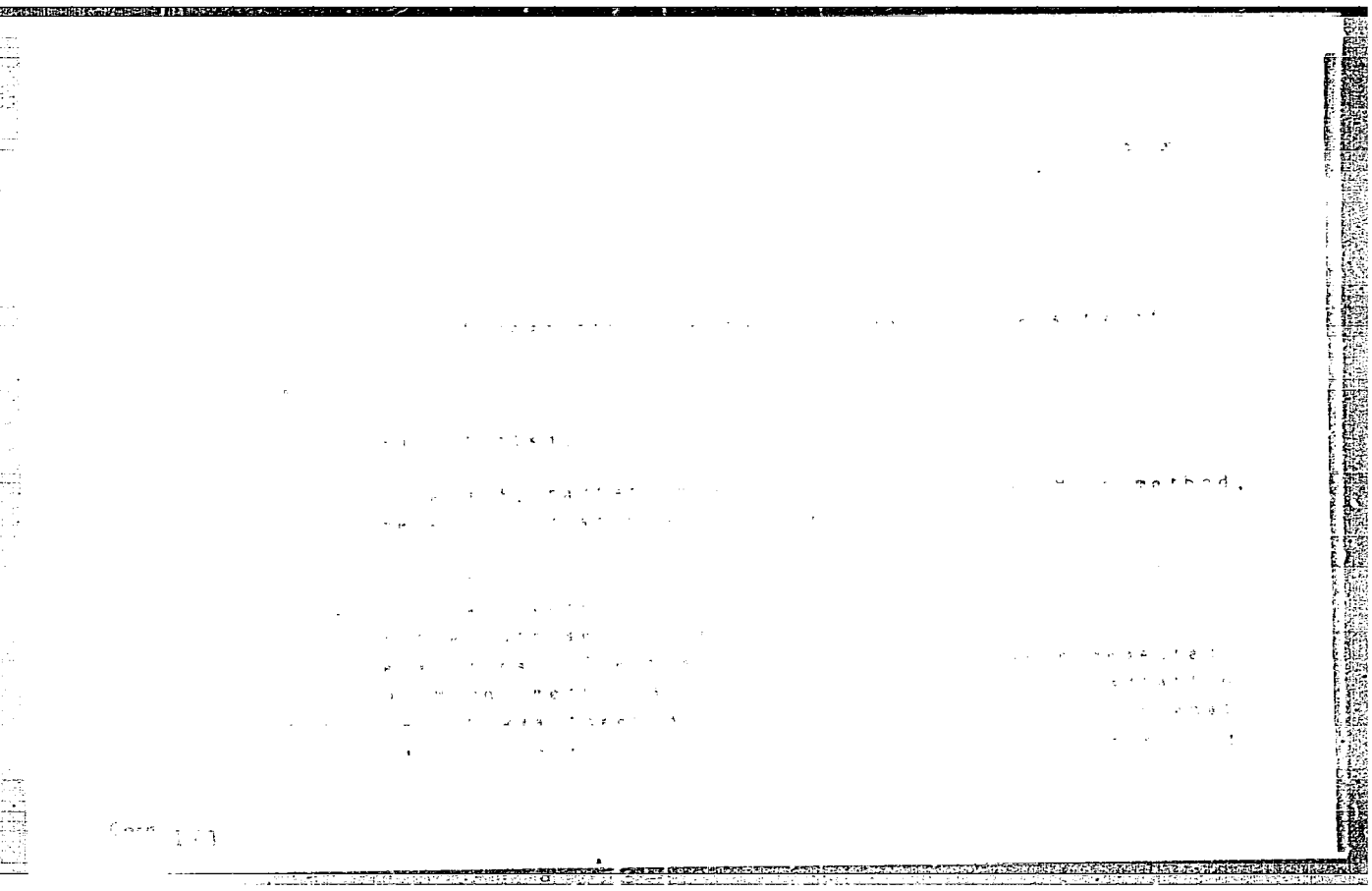
KROTIKOV, V.D.; TROITSKIY, V.S.

Radio-frequency radiation from and nature of the moon. Usp. fiz. nauk 81 no.4:589-639 D '63. (MIRA 17:1)

KROTIKOV, V.D.

Theory of lunar integral radio emission. Izv. vys. ucheb. zav.; radiofiz. 6 no.5:889-896 '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.



servation of all reference

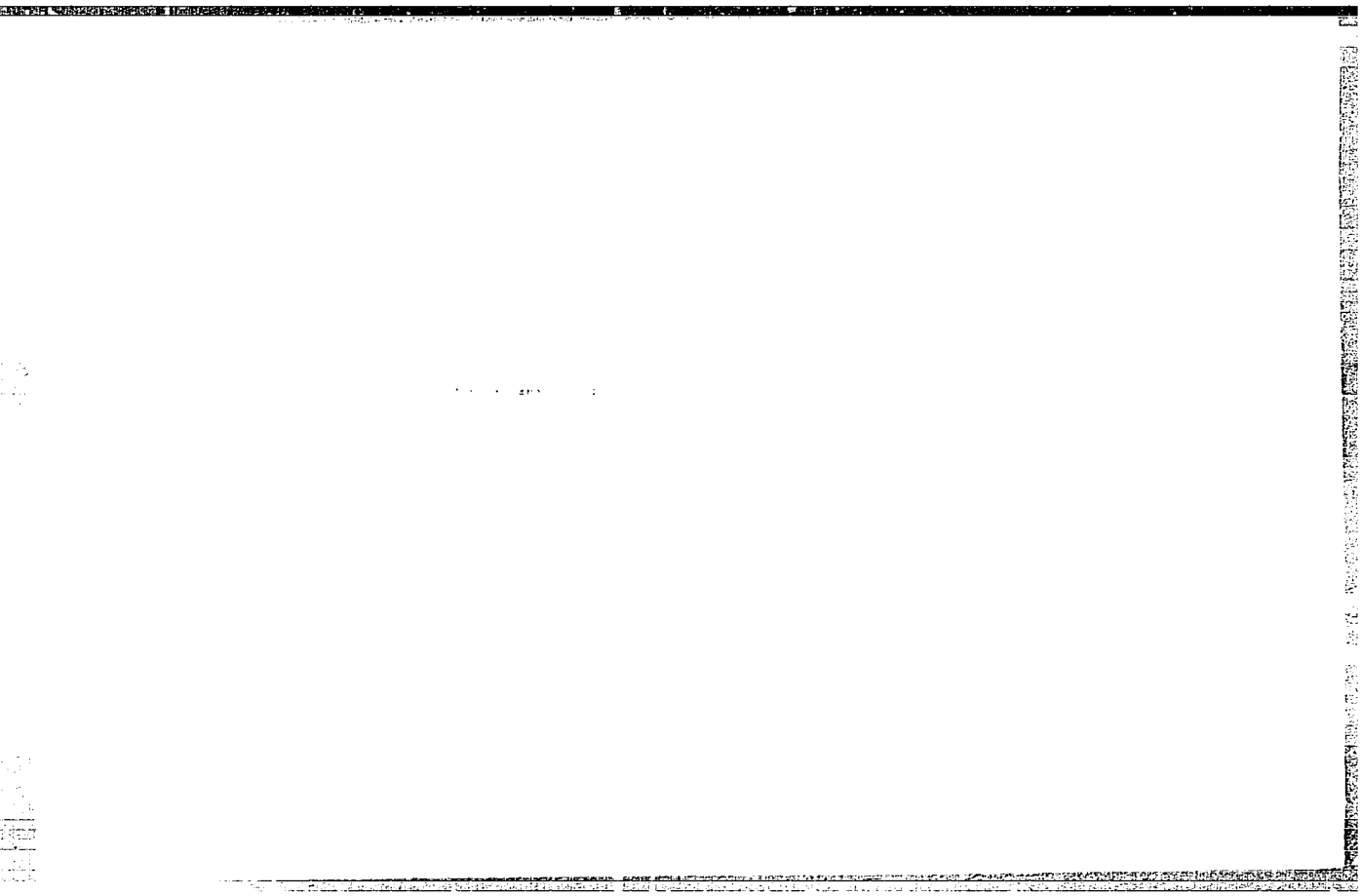
Card 2 / 3

AP4044109

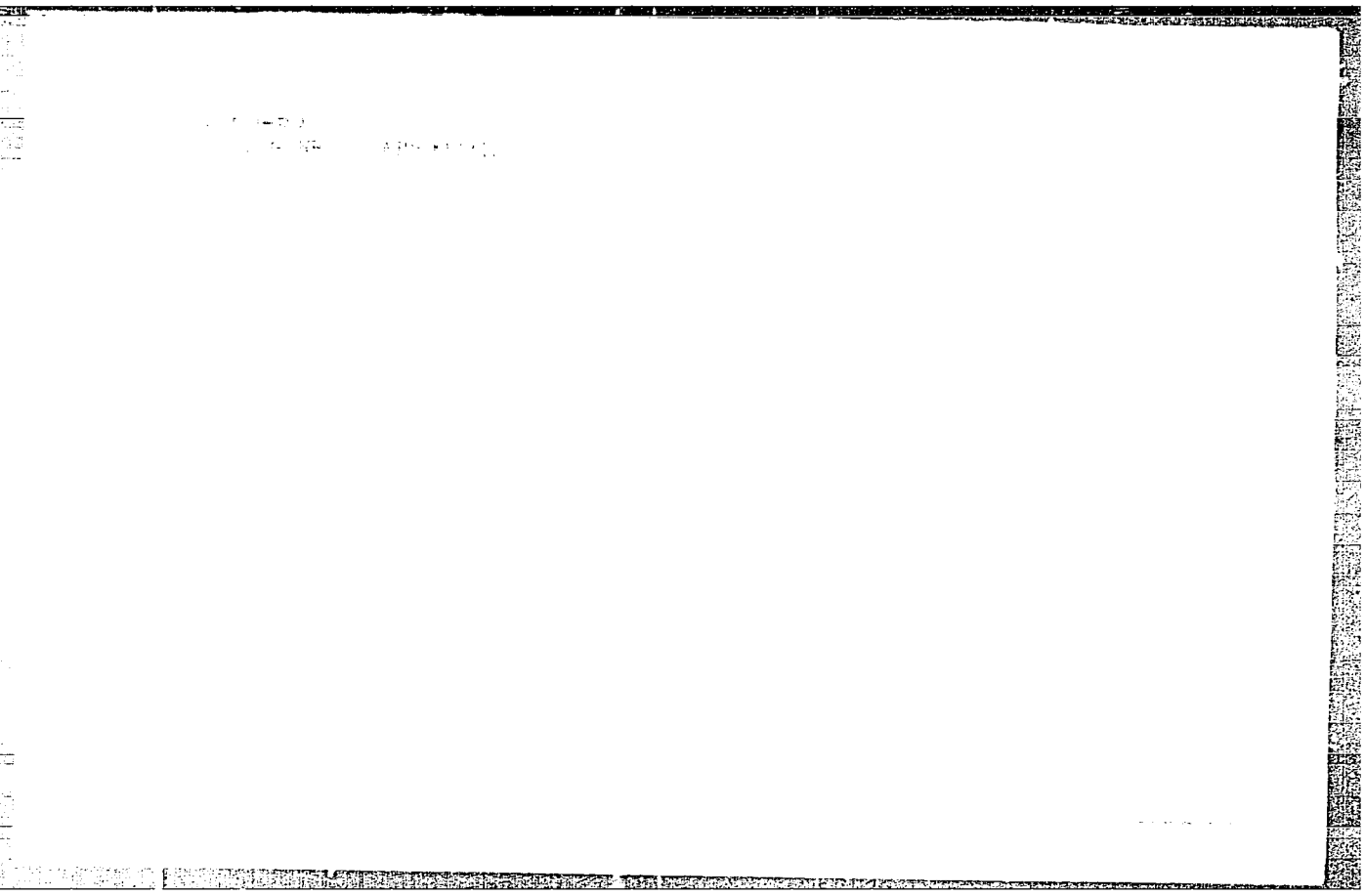
21Dec63

SUB CODE: AA, EC NO REF SOV: 004 OTHER: 007

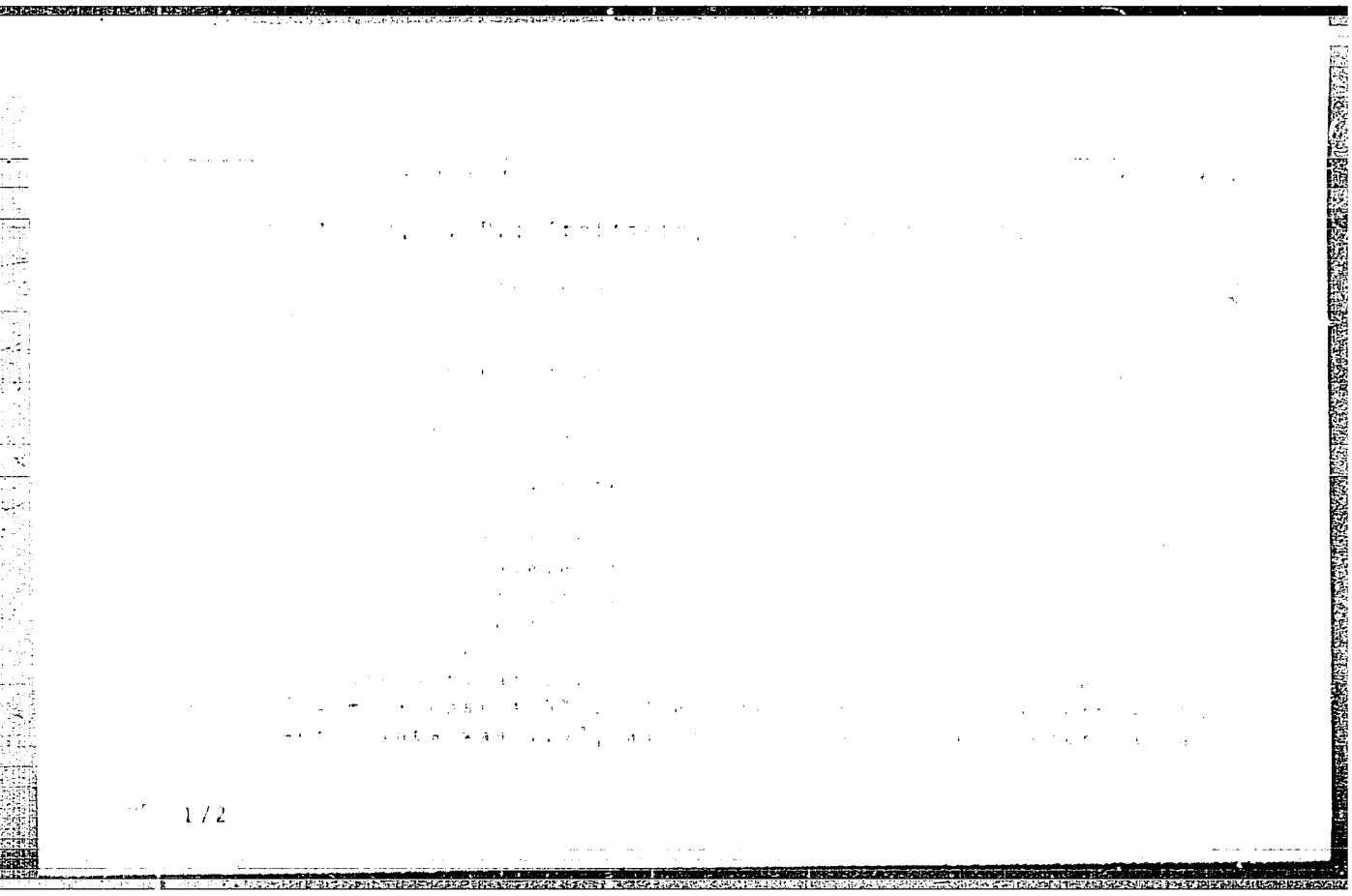
Card 3/3



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630008-8"



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630008-8"



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630008-8"